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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,524	01/21/2004	Wei-Hong Wang	2019-0236P	1104

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EXAMINER	
LIN, JAMES	

ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 06/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/760,524	WANG, WEI-HONG	
	Examiner	Art Unit	
	Jimmy Lin	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *2,4-7 and 10-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,8 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/21/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in the reply filed on 12/16/2005 and species 2 in the reply filed on 5/4/2006 are acknowledged. The traversal is on the ground(s) that an examination of two similar inventions does not constitute a serious burden. This is not found persuasive because even if the Applicant does not consider the examination a burden, the election-restriction is based on the two different inventions,namely, the device and the process for manufacturing. An examination of the device does not mean that the references used to reject it will automatically be used to reject the manufacturing process, since both the inventions have different features of limitations. Thus, the serious burden on the Examiner of having to search all the features of limitations directed to different inventions and to reject each invention using different references is eliminated by the proper election of invention requirement.

The requirement is still deemed proper and is therefore made **FINAL**.

2. Claims 2, 4-7, and 10-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 05/04/2006.

Claims 1, 8, and 9, in addition to the elected claim 3, are under consideration. Claims 17 and 19 do not seem to properly depend from claims 8 and 1, respectively. Both claims 17 and 19 recite "said coating frame". Claims 8 and 1 never recite a coating frame. Therefore, claim 17 seems to more appropriately depend on one of claims 10-16, and claim 19 seems to more appropriately depend on one of claims 10-18, all of which are directed to a non-elected species.

Claim Objections

3. Claim 8 is objected to because of the following informalities: It seems that the different lamps recited in the claim refer to different embodiments. For example, the specification distinguishes between a "normal" fluorescent lamp and an RGB fluorescent lamp (page 22, line 4). Thus, 1) the phrase "said fluorescent lamp

comprises" should be changed to "said fluorescent lamp is selected from the group consisting of"; or 2) the phrase "normal fluorescent lamps, RGB three wave fluorescent lamps, **and** high frequency fluorescent lamps" should be changed to "normal fluorescent lamps, RGB three wave fluorescent lamps, **or** high frequency fluorescent lamps".

In addition, the recited "RGB three wave" should be corrected to "RGB three wavelength".

Appropriate correction is required.

4. Claim 9 is objected to because of the following informalities: Figs. 6A-6D show the tube configurations as separate embodiments. Thus, 1) the phrase "said fluorescent lamp comprises" should be changed to "said fluorescent lamp is selected from the group consisting of"; or 2) the phrase "a spiral tube, **and** a special dual-layer tube" should be changed to "a spiral tube, **or** a special dual-layer tube". Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 3, 8, and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the brightness of the photocatalytic coating fluorescent lamp increases (line 18). It is indefinite as to what the photocatalytic coating fluorescent lamp is being compared to when reciting that the brightness increases. Is the brightness being compared when the lamp is turned off and turned on?

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawakatsu (6,242,862).

Kawakatsu discloses a method of fabricating a photocatalytic fluorescent lamp (Fig. 12) comprising:

preparing semiconductor anatase TiO_2 sol (column 9, lines 35-36) using titanium alkoxide as a main component in combination with a chelating agent in aqueous solution (column 15, lines 7-15);

dip coating the nano-crystalline anatase sol (column 15, lines 15-16) on a surface of a fluorescent lamp tube (Fig. 12);

baking said fluorescent lamp tube coated with nano-crystalline anatase sol to form a photocatalytic coating fluorescent lamp (column 4, line 23) capable of cleaning air (column 1, lines 17-18)

wherein baking step is carried out at a temperature above 200 °C (column 4, line 23).

Considering that the materials used in forming the nano-crystalline anatase sol and the baking temperature are substantially the same as those disclosed and claimed by applicant, the brightness of the photocatalytic coating fluorescent lamp would inherently increase (although with no particular basis of comparison, as noted above), and a small amount of UVA and blue light from the fluorescent lamp would inherently be absorbed by the anatase coating.

Claim 3: The anatase TiO_2 is prepared with ethanol (column 15, lines 7-11). Ethanol is a basic substance. Adding H_4TiO_4 solution to a H_4TiO_4/TiO_2 ratio of 0wt%.

Claim 8: A normal fluorescent lamp can be used (Fig. 12).

Claim 9: The fluorescent lamp is a straight tube (Fig. 12).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakatsu (6,242,862) in view of Kobayashi et al. (7,004,591).

Kawakatsu discloses a method of fabricating the anatase TiO_2 sol using an alkaline process as discussed above, but does not teach adding H_4TiO_4 solution to a H_4TiO_4/TiO_2 ratio of about 0-10wt%, wherein the ratio is above 0wt%. However, Kobayashi teaches a coating agent including photocatalyst particles dispersed in a titanium peroxide solution. A mixture of orthotitanic acid (H_4TiO_4) and hydrogen peroxide is used to prepare the solution. The combination of the photocatalyzer and hydrophilic substance provides good adhesion properties (abstract). The photocatalyst particles can be anatase TiO_2 particles (column 2, lines 50-52). When combining H_4TiO_4 and hydrogen peroxide to form titanium peroxide solution, at least trace amounts of H_4TiO_4 would remain unreacted, thus forming a H_4TiO_4/TiO_2 ratio of between 0-10wt%. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have added a titanium peroxide solution to the TiO_2 of Kawakatsu. One would have been motivated to do so in order to improve adhesion properties of the photocatalyst.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wiederhoft et al. (5,840,111) discloses a process for making nanodisperse titanium dioxide.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902.

The examiner can normally be reached on Monday thru Thursday 8 - 5:30 and Friday 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

06/14/2006

TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER